CAUSES AND MANAGEMENT OF HIGH FETAL HEAD IN PRIMIGRAVIDAE AT TERM

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ABSTRACT

Objective: To determine the causes of high foetal head and their relative frequencies in primigravidae presenting at term and to determine the proportion of these patients undergoing lower segment caesarean section or vaginal delivery.

Design: A descriptive study.

Place and duration of study: The study was carried out at CMH Rawalpindi from April 2002 to March 2003.

Patients and Methods: A total of 100 primigravidae patients presenting at term and having a single pregnancy were randomly selected. On the basis of history, Physical examination and abdominal ultrasonography, patients having a high foetal head were recognized and their causes documented.

Results: Out of 100 primigravidae, 58 had high foetal head. A discernable cause was found in the 39 (67.2%) patients. Cephalopelvic disproportion (20.7%) and foetal mal position (17.2%) were the leading cause of high foetal head. Lower segment Caesarian section (50%) was the management of choice in half of the patients with high foetal head.

Conclusions: Cephalopelvic disproportion and foetal malposition were the major cause of high foetal head in this study and lower segment Caesarean section was the mode of delivery in only 50% of these high risk subjects.

Keywords: High foetal head, cephalopelvic disproportion, lower segment caesarean section

INTRODUCTION

A high foetal head in primigravidae at term is regarded as a risk factor for obstructed labour or dystocia [l] and is indeed major contributor of maternal mortality. Since safe delivery is obstetrician's goal in such cases, it is customary to manage these cases by lower segment caesarean section (LSCS). This has lead to an increased rate of LSCS [2] with its financial implications and future family size restriction for the patients.

Studies, however, show that depending upon the cause, many primigravidae with high foetal head can be given a trial of labour and can be successfully delivered vaginally [3]. Finding the cause, therefore, is the first step towards spontaneous or assisted vaginal delivery. The foetal head would remain high whenever there is obstruction in powers, passages and the passenger. This pertains to both bony as well as soft tissue aspects of mother and foetus and includes uterine and extra uterine causes and includes cephalopelvic disproportion (CPD) [3], foetal malposition [4], large size of fetus [5], soft tissue masses in the pelvis such as uterine fibroids, ovarian tumors, placenta previa and even faecal impaction has been reported to obstruct descent of foetus in labour [6]. The frequency of causes of non engaged foetal head varies in different countries according to prevalence of type of pelvis, nutritional status and a trend towards heavier babies.

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Keeping in view the prevailing high rates of LSCS in primigravidae with high foetal head at term, the present study was carried out to document the frequency and causes of high foetal head in primigravidae and to determine the outcome of management, whether LSCS or vaginal for various causes.

PATIENTS AND METHODS

A total of one hundred primigravidae at term, aged 17-30 years and having a singleton pregnancy reporting to Gynae/Obstetrics outpatient department of CMH Rawalpindi, were selected by random sampling technique from April 2002 to March 2003. This is a descriptive study. Primigravidae with history of previous uterine surgery or having gross foetal abnormalities, polyhyhydramnios and intra uterine foetal death were excluded from the study. After taking a detailed medical and obstetric history, these patients underwent a thorough physical examination including obstetric examination. Abdominal ultra sonography was then carried out for assessment of foetal biometric parameters and delineating any uterine or ovarian mass. Maternal, foetal and placental causes of high foetal head were assessed on the basis of history, examination and investigations. The patients were then segregated in two groups: those in whom the underlying cause of high foetal head required direct cesarean section and the second in whom a trial of labor was considered. In the second group in whom a trial of labor was undertaken, monitoring of maternal vital signs, her hydration status and uterine contractions were carried out, while foetal monitoring included intermittent auscultation and intrapartum cardiotocography. The over all progress of labor was monitored by a partogram. The mode of delivery, whether, spontaneous or assisted vaginal or abdominal was chosen according to the maternal and foetal progress in labor and the underlying causes were noted. The study yielded nominal data that was entered on SPSS version 10. Frequency and percentages were used to describe the data.

RESULTS

Out of 100 Primigravidae patients, aged 17-30 years, presenting at term, 58 (58%) had high foetal head. Among these, a discernable cause could be found in 39 patients (67.2%) where as no cause could be demonstrated in 19 subjects (32.8%). The different causes of high foetal head were as follows: CPD were found in 12 (0.7%) patients, foetal malposition 10 (17.2%) patients, Large foetal size in 5 (8.6%) patients. Placenta praeviae in 5 (8.6%) patients, cord around foetal neck in 4 (6.9%) patients and uterine fibroid in 3 (5.2%) patients (fig. 1). Percentages of difference outcomes are given in (fig. 2). Among 58 patients, 22 (37.9%) were subjected to direct LSCS. These included patients having CPD (n=12). Large foetal size (n=2), placenta previa (n=5) and lower uterine segment fibroid (n=3). A total of 36 (62.1%) patients underwent trial of labour. Out of these 36 subjects 7 (18.4%) patients underwent emergency LSCS including all the 4 patients with umbilical cord around the foetal neck. Two patients having foetal malposition and 1 patient in whom no cause for a high foetal head could be determined. Among those 36 patients, another 15 (41.7%) patients had spontaneous vaginal delivery including 11 patients without any discernable cause, 2 patients having foetal weight > 4 kg, and

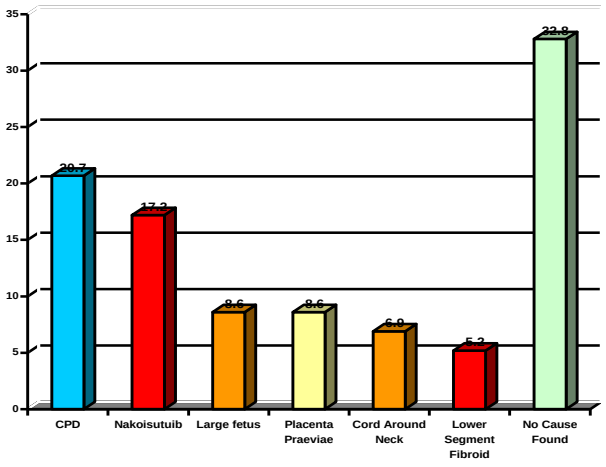

Fig. 1: Percentage of causes of non-engaged fetal head at term.

another 2 patients having foetal malposition. In the same 36 patients, 9 (25%) patients delivered by ventouse including 4 patients with foetal malpositions and 5 patients without any demonstrable cause. Out of these 36 patients, another 5 (13.9%) had forceps delivery; they included 2 patients without any cause, 2 patients with foetal malposition and 1 patient having foetal weight > 4 kg. Hence, the overall frequency of different modalities of treatment.

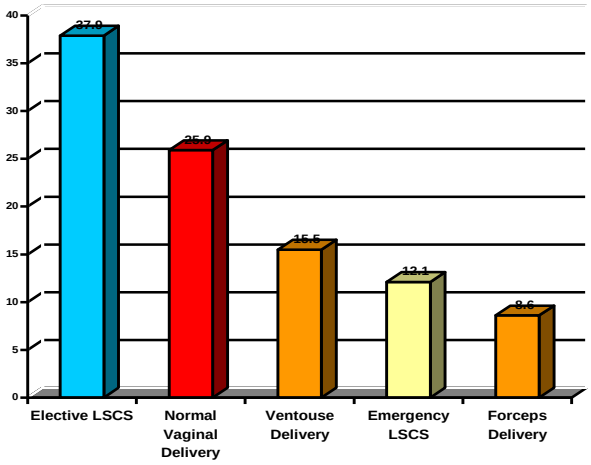

Fig. 2: Percentages of outcome.

DISCUSSION

In the last two decades, the rising rate of LSCS is under critical review. One of the main reasons of this escalation is direct LSCS of primigravidae with non engaged foetal head at term which is a frequently encountered finding in obstetric practice. In our study, 58% primigravidae presenting at term had unengaged foetal head. This is supported by similar studies carried out over the past three decades by Weekes and Flynn [7], Takahashi and Suzuki [8], Kushtagi [9] and Oiegman et al [10], who observed high foetal head in 50%, 75%, 83% and 69% of their patients, respectively. Interestingly, all these studies did not observe any significant difference in labour outcomes between nulliparous women with engaged or non engaged foetal head at onset of labour.

The main causes of high foetal head in our study were CPD and foetal malposition. A similar finding is documented by Mokasha FM [11], Trevino Tamez et al [12], Bolaji, Meehan FP [13] and Gayam A [14]. These studies concluded that CPD is the most common cause of non engaged foetal head especially in teenage primigravidae. A high incidence of foetal malposition was also noted in this age group. Plausible explanations of these observations were that young pregnant subjects have an inadequately developed small pelvis as compared to the foetal size, to allow normal rotation, adaptation and smooth passage to the foetus. This leads to foetal malposition and CPD. In our study, since 35 patients were in their late teens, a high frequency of CPD and foetal malposition were observed in them. Another five year study at National Maternity Hospital at Dublin observed that persistent occipitoposterior (OP) position (24%) and CPD (11%) were the main causes of high foetal head in primigravidae patients [15]. In our study, persistent OP position was observed in only six (10.7%) primigravidae having high foetal head, whereas other causes of high foetal head like foetal macrosomia, placenta previa, cord around foetal neck and uterine fibroids occurred with even much less frequency. An important observation of this study was that no cause could be ascertained in 19 subjects.

Out of 58 patients with high foetal head, 29 (50%) patients underwent LSCS while the other half delivered vaginally when given a safe trial of labor, with satisfactory maternal and foetal outcome. The subjects undergoing LSCS included all patients having CPD, placenta previa, patients having umbilical cord around foetal neck, uterine fibroids whereas only 2 patients having foetal macrosmia and 1 patient in whom no cause could be demonstrated were subjected to operative delivery. This finding is in line with the Mexican study that observed a 45% LSCS rate in patients with high foetal head [12]. Local studies by Qureishi et al [16], documented a frequency of 53% LSCS in these patients was due mainly to CPD and foetal malposition [17] observed a 24% LSCS rate in primigravidae with high foetal head.

These studies also - observed that spontaneous onset of labor in such patients was a predictor of successful normal vaginal delivery and therefore a significant number of operative deliveries could be avoided even in this high risk group of patients by giving them a safe trial of labor. A study by Murphy [18] implied foetal macrosomia (foetal weight > 4kg) and OP -position as risk factors for LSCS, but recommended vaginal delivery in these subjects unless these risk factors were compounded by concurrent CPD.

A study by Roshan Feker et al [19], reported 86% vaginal delivery rate in primigravidae with non engaged foetal head as compared to a 50% frequency of vaginal delivery in our study. Falzone et al [20], also observed that lack of engagement at the onset of labor though a statistical risk factor for dystocia may not be assumed to predict CPD and subsequent operative intervention for the patient. In a prospective study by Fitzpatrick et al [21], a high frequency of assisted vaginal delivery was reported in primigravidae having persistent OP position. This finding coincides with our study where ventouse and forceps delivery remained high in such patients.

CONCLUSIONS

Cepholopelvic disproportion and foetal malposition were the major cause of high foetal head in this study and lower segment Cesarian section was the mode of delivery in only 50% of these high risk subjects.

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